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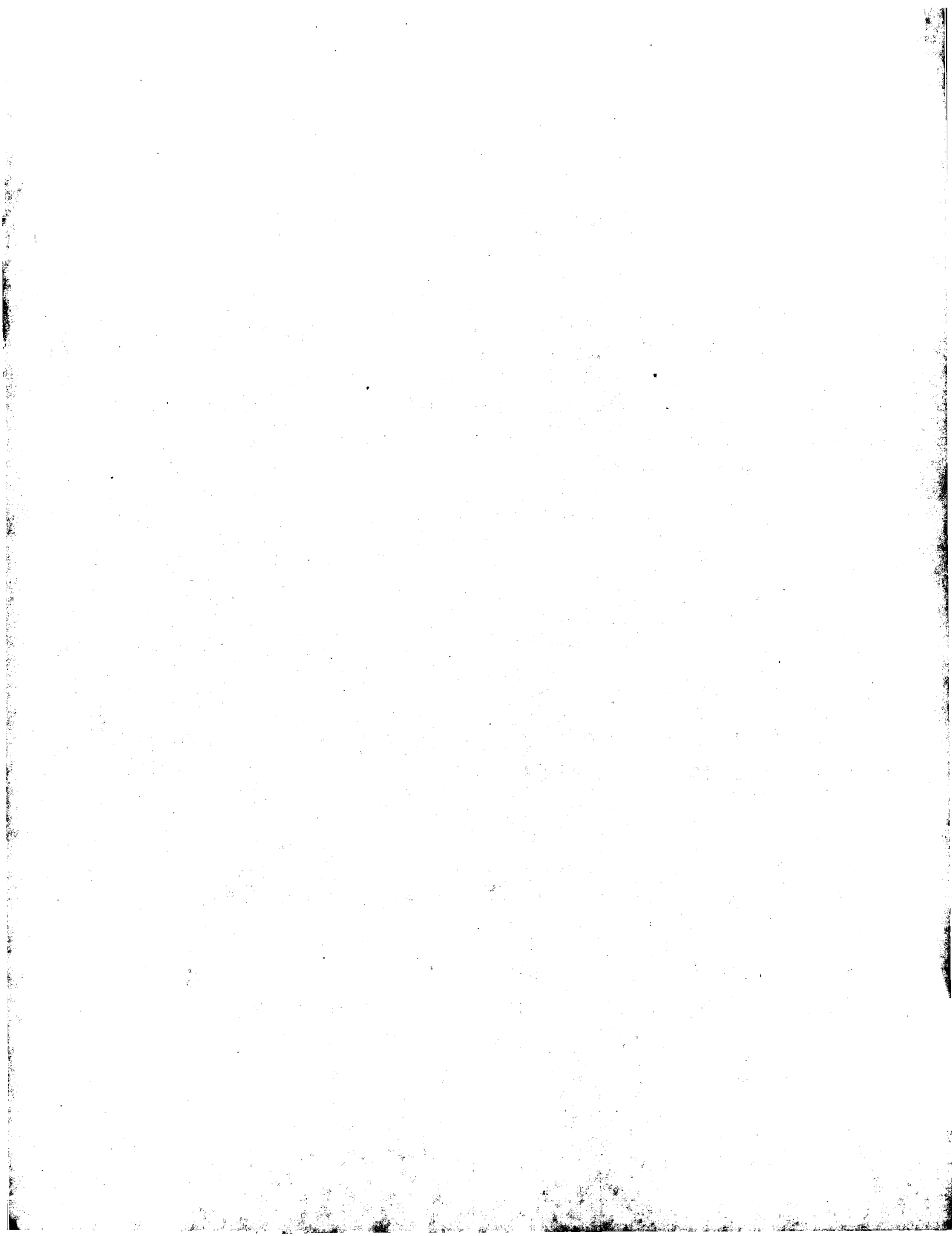
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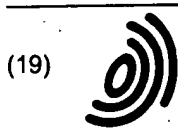
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(54) TOOL CASE WITH EXTERNALLY-ACCESSIBLE COMPARTMENTS

WERKZEUGKASTEN MIT VON AUSSEN ZUGÄNGLICHEN FÄCHERN

BOITE A OUTILS A COMPARTIMENTS ACCESSIBLES DE L'EXTERIEUR

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Description

TECHNICAL FIELD

[0001] This invention relates to tool cases, particularly of the type used to display tool sets at the point of sale, and to subsequently store the tool sets. Such tool cases are commonly referred to as "gift cases".

BACKGROUND ART

[0002] Cases of the general type are well known, and typically include a base in the form of an open-topped box, and a lid hinged or otherwise mated with the box portion, with a clip or other means to hold the lid shut. The case typically also contains a panel with a number of recesses to accommodate various tools and components, such as a screwdriver and various bits therefor, for example.

[0003] A storage container is disclosed in US-A-4,846,346, which has an upper and lower portion hingedly mounted along a horizontal axis so that the upper portion may be used for storage, to increase the usable volume. A further hingedly mounted lid portion is attached to the lower portion and has tool holding means.

[0004] A similar storage container is disclosed in US-A-4,294,348, having two opposed hingedly mounted lid portions attached to a main portion of the case.

[0005] However, these conventional configurations do not efficiently use the available space in the case because a large volume of unused space typically is left between the panel and the bottom of the box portion of the case, or may be available elsewhere, such as on one side of the case.

DISCLOSURE OF INVENTION

[0006] In view of the above, it is an object of the invention to provide an improved tool case with storage compartments which are accessed from the exterior of the case. These compartments may be used by the purchaser to store additional items which might be employed in conjunction with the tools stored in the tool case.

[0007] In a preferred embodiment of the invention, a tool case of general prismatical quadrangular form which is, preferably, made entirely of plastic comprises two shell pieces connected to each other. The two shell pieces are a box portion and a lid, securable onto said box portion. The box portion has at least one recess or one cut-out section, which is typically but not necessarily provided in the bottom surface thereof. The recess and the cut-out section, respectively, are adapted to cradle and serve as a bearing surface for one or more storage compartments to store additional items which might be employed in conjunction with the tools stored in the tool case. The storage compartments are permanently or re-

movably mounted within the recess or cut-out section and accessible only from the exterior of the tool case and the recess or cut-out section extends across substantially less than all of the length of the box portion and parallel to its longitudinal axis.

[0008] In some embodiments, the compartments may be integral to the tool case, while in other embodiments the compartments may be removable, i.e. they may be snapped in or otherwise secured in an appropriate recess in the case, typically but not necessarily on the bottom of the case. Removable snap-in modules provide the manufacturer with many configurations options, such as those described below and illustrated in the accompanying drawings.

[0009] In a preferred embodiment, a number of compartments are pivotally mounted in a recess and are connected to each other, for example by gang bars, to allow them to pivot in unison from a closed position to an open position.

BRIEF DESCRIPTION OF DRAWINGS

[0010] In order that the invention may be more clearly understood, the preferred embodiment thereof will now be described in detail by way of example, with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view looking down on the lid of a preferred embodiment of the tool case, where the compartments are permanently secured in the recess;

Fig. 2 is a perspective view looking down on the bottom of the box portion of the tool case of Fig. 1;

Fig. 3 is an exploded view showing the recess and the storage compartments of the Fig. 1 embodiment;

Fig. 4 is a cross-sectional view of a storage compartment along line A-A in Fig. 5;

Fig. 5 is a plan view of a storage compartment of the Fig. 1 embodiment;

Fig. 6 is a side view of a storage compartment of the Fig. 1 embodiment;

Fig. 7 is a cross-sectional view of the box portion and storage compartments in the closed position along B-B in Fig. 2;

Fig. 8 is a cross-sectional view of the box portion and storage compartments in the open position along B-B in Fig. 2;

Fig. 9 is an exploded view of the top of the tool case of the Fig. 1 embodiment;

Fig. 10 is a plan view of the tool case of the Fig. 1 embodiment with the lid removed;

Fig. 11 is a cross-sectional view of the tool case along line C-C in Fig. 10;

Fig. 12 is a perspective view of an alternative configuration of the tool case;

Fig. 13 is a cross-sectional view of the alternative configuration in Fig. 12;

Fig. 14 is an exploded perspective view of a preferred embodiment of the tool case with a removable snap-in storage module;

Fig. 15 is an exploded perspective view from the top of the tool case of Fig. 14 showing a tool and component holding panel;

Fig. 16 is a perspective view from the underside of the tool case of Fig. 14;

Fig. 17 is an exploded perspective view showing a "drop-bin module" similar to the compartments in the embodiment of Fig. 1, but removably installable in the storage space;

Fig. 18 is a cross-sectional view showing the removal of the drop-bin module;

Fig. 19 is a cross-sectional view of the securing mechanism for the module;

Fig. 20 is an exploded perspective view of the drop-bin module and case;

Fig. 21 is a perspective view of an alternative storage compartment module in the case;

Fig. 22 is an exploded perspective view of the alternative storage compartment module and case;

Fig. 23 is a perspective view of a sliding drawer module in the case;

Fig. 24 is an exploded perspective view of the sliding drawer module in the case;

Fig. 25 is a perspective view of a wedge-shaped compartment module in the case;

Fig. 26 is an exploded perspective view of the wedge-shaped compartment module and the case;

Fig. 27 is a cross-sectional view of the wedge-shaped compartment module;

Fig. 28 is cross-sectional view of the securing mechanism for the wedge-shaped compartments;

Fig. 29 is a perspective view of a multi-compartment module in the case in the closed position;

Fig. 30 is a perspective view of the multi-compartment module in the case in the open position;

Fig. 31 is an exploded perspective view of the multi-compartment module;

Fig. 32 is a perspective view of a multiple shelf module in the case;

Fig. 33 is an exploded perspective view of the multiple shelf module and the case;

Fig. 34 is a cross-sectional plan view showing an alternative embodiment where the compartments are positioned along a side of the case;

Fig. 35 is a side view corresponding to Fig. 34;

Fig. 36 is a side view of an alternative means of ganging compartments together, using a pin and slot arrangement; and

Fig. 37 is a side view corresponding to Fig. 36, showing the compartments rotated.

2 moulded to the front edge thereof, as well as a preferably transparent lid 3 hinged to the box portion, for example, by two hinges 4, and secured to the box portion by a clip 5. Preferably, the tool case is made entirely from plastic.

[0012] Fig. 3 shows the bottom of the box portion which is moulded with a recessed storage space 15 to accommodate preferably one row of six storage compartments 16 pivotably mounted within the recess in a straight line parallel to the sides of the tool case. In the preferred embodiment, the recess containing the storage compartments is located within the section of the box portion furthest from the hinges. However, it will be appreciated by one skilled in the art that the storage compartments may be positioned in the centre of the box portion or in the section of the box portion nearest to the hinges. In this embodiment, the storage compartments are permanently installed in the tool case.

[0013] As best shown in Figs. 4, 5, and 6, the storage compartments have two identical parallel five-sided walls 17 which are joined by three generally rectangular faces 18 to form the compartment. The two remaining faces are open to provide access to the storage compartment. The storage compartments are preferably moulded from clear plastic to permit the user to examine the contents without opening the compartments.

[0014] In the closed position, the faces of the storage compartments form a single plane flush with the bottom surface of the box portion, as shown in Fig. 2, so that the bottom of the tool case can rest flat on a work surface when the user has opened the lid to access the tools in the panels.

[0015] Fig. 3 shows that each storage compartment is joined to the box portion by a male connection pin 25 which extends outwardly at a right angle from the two walls of each storage compartment. A corresponding recessed female connection means 26 adapted to receive the pins of each storage compartment is moulded into both sides of the recess of the box portion adjacent to the walls of the compartments. The pin of each storage compartment is inserted into the corresponding female connection means, such that the compartments are prevented from falling out of the recess in the box portion, but are permitted to freely rotate. It is understood by one skilled in the art that other methods of pivotally connecting the storage compartments to the box portion may be employed and are within the scope of the invention. For example, Figs. 36 and 37 illustrate an embodiment in which this ganged motion is brought about by pins 85 riding in appropriately-shaped slots 84 of adjacent compartments 16.

[0016] As best shown in Fig. 3, all of the storage compartments are joined by two gang bars 30 to allow the compartments to only move in unison. The gang bars are located in the space between the side walls of the storage compartments and the sides of the recess. The gang bars are connected to the storage compartments by protruding cylindrical male connections 31 located

BEST MODE FOR CARRYING OUT THE INVENTION

[0011] Referring to the drawings, Fig. 1 shows a tool case which includes a main box portion 1 with a handle

along their length which fit snugly into female openings 32 in the side walls of each storage compartment. It should be clear that only one gang bar could be employed.

[0017] The storage compartments are prevented from freely rotating by a plastic clasp 35 moulded from one piece of plastic, attached to the box portion and preferably located adjacent to the storage compartment closest to the handle. However, any other suitable means of securing the storage compartments to the box portion may be used and such means would be within the scope of the invention. As best shown in Fig. 7, a section of the clasp 38 moulded into an aperture is snapped by conventional means onto a cooperating plastic member 39 extending outwardly from the base. The clasp configuration includes a ridge 36 extending over the face of the storage compartment when it is in the closed position to secure the compartments in the closed position. The clasp configuration also includes a catch 37 to permit the user to easily grasp the clasp configuration. To pivot the compartments to the open position, the user grasps the catch and pulls it away from the storage compartments lifting the ridge which extends over the adjacent storage compartment and restricts its rotation. The user can freely pivot the storage compartment adjacent to the clasp into an open position, and when the user does so, the user also moves the gang bar connected thereto, which gang bar then imparts the motion to all the other compartments causing them to move in unison.

[0018] In the preferred embodiment, a modular plastic panel 9 with a raised portion 10 is mounted across a section of the box portion above the storage compartments, as best shown in Fig. 9. The raised portion is recessed to accommodate components with little depth, such as screwdriver bits and sockets, and provides space beneath it for the compartments. A conventional modular plastic panel 9' mounted across the remaining section of the box portion and is recessed to house tools and other parts with substantial thickness. Fig. 10 shows one such configuration for a conventional panel and a raised panel, but many different configurations for the recesses in the panels are possible to accommodate different tools and different components for the tools.

[0019] The panels are preferably mounted in the box portion by inserting male connecting posts 11 into corresponding female receiving posts 12, as best shown in Fig. 9, although other methods of mounting the panels will be readily apparent to those skilled in the art.

[0020] Fig. 11 shows a number of bits arranged in recesses in the surface of the raised portion 10. It should be understood that instead of fixed holders such as these recesses, the bits could be positioned in pivotable holders mounted on the raised portion, such that they would normally lie flush with the raised portion, but could be rotated therefrom to provide easier access.

[0021] Figs. 12 and 13 show an alternative embodiment of the invention where the conventional panel de-

scribed above is removed and, instead, dividers 45 are mounted within the box portion to create storage sections. The storage sections are created by inserting the dividers into matching moulded slots 46 projecting upwardly from the bottom of the box portion. The height of the dividers is such that when the lid is in the closed position, the dividers are flush with the inside surface of the lid, thereby preventing items in one storage section from accidentally shifting to another section if, for example, the tool case is agitated. The raised panel (not shown) is mounted above the storage compartments, as described previously.

[0022] Figs. 14-35 show various configurations where the storage compartments are not permanently installed, but instead are removable.

[0023] In these embodiments, an opening 6, preferably but not necessarily rectangular, is defined in the tool case, preferably but not necessarily in the bottom surface of the box portion. Moulded interior walls 7 project upwardly from the edges of the rectangular opening into the box portion to define a storage space 15. The storage space accommodates removable modules 8 of any desired configuration, such as the "drop bin assembly" shown in Figs. 14-20.

[0024] Fig. 15 shows a plastic panel 9, preferably moulded with a raised portion 10 located over the rectangular opening to provide extra space for the snap-in module. However, a flat panel could be used in the tool case, although the space available for a snap-in module would, of course, be smaller. The panel is secured to the box portion by any suitable means, such as, for example, by inserting posts 11 protruding from the panel into corresponding sleeves 12 moulded onto the box portion. For additional support, the panel rests on preferably three support members 13 along the side of the box portion adjacent to the hinges. Various shapes 14 are moulded within the panel to accommodate corresponding tools with substantial depth, as well as components such as screwdriver bits and sockets. The shapes defined within the raised portion of the panel and components retained therein have little depth, and are, therefore, only adapted to retain components such as screwdriver bits and sockets. The shapes are moulded in such a way that the corresponding tools and components can be secured by snapping same into the corresponding shapes 14 in a conventional manner, so that if the tool case is oriented with the lid facing downward, the tools stored in the first panel do not fall out of their designated shapes.

[0025] The module 8 is secured within the storage space 15 by any suitable means, such as by snapping the module into the interior walls 7 by any suitable means such as two tabs 29 extending outwardly from a first side 19 of the module, which are inserted into corresponding slots 20 located within an adjacent interior wall. The module is then rotated into the storage space so that a flexible moulded plastic arm 21 projecting upwardly and away from the second side 22 of the module

engages a lip 23 protruding from the adjacent interior wall. The lip is engaged by a jaw 24 located at the distal end of the arm which snaps onto the lip to secure the module to the box portion. A semi-circular depression 27 is defined within the box portion surrounding the lip.

[0026] As best shown in Fig. 19, the module is removed by the user sliding his/her finger into the semi-circular depression 27 which allows the finger to engage the arm 21 and pull it away from the box portion, freeing the module to be rotated out of the storage space 15.

[0027] Fig. 20 shows the preferably five identical drop-bin storage compartments 28, each having two identical parallel five-sided walls 17 which are joined by three generally rectangular faces 18 to form the compartment. The two remaining faces are open to provide access to the storage compartment. The storage compartments are preferably moulded from clear plastic to permit the user to examine the contents without opening the compartments.

[0028] In the closed position, the faces of the storage compartments preferably form a single plane flush with the bottom surface of the box portion so that the bottom of the tool case can rest flat on a work surface when the user has opened the lid 3 to access the tools in the panel 9.

[0029] The storage compartments locate within a recess 90 defined within the body 91 of the module, and each compartment is joined to the sides of the recess by a male connection pin 25 which extends outwardly at a right angle from the two walls of each storage compartment. A corresponding recessed female connection means 26 adapted to receive the pins of each storage compartment is moulded into both sides of the recess adjacent to the walls of the compartments. The pin of each storage compartment is inserted into the corresponding female connection means, such that the compartments are prevented from falling out of the recess, but are permitted to freely rotate. Alternative methods of pivotally connecting the storage compartments to the box portion will be apparent to those skilled in the art and are within the scope of the invention.

[0030] The storage compartments are joined, preferably, by two gang bars 30 to allow the compartments to only move in unison. The two gang bars are located in two corresponding grooves 93 defined within the sides of the recess. This is substantially as described above in connection with the embodiment in which these compartments are permanently installed.

[0031] Figs. 21 and 22 show an alternative embodiment of the invention where a recess 90 is defined within the body 44 of the snap-in module 8 to define a generally box-shaped storage compartment 41. A door 42 is rotatably connected to the body by any suitable means, such as, for example, a living hinge 43. The door is secured to the storage compartment by a plastic clasp configuration 35 snapped onto a plastic member 39, as described in the preferred embodiment, such that when the door is in the closed position it is flush with the bottom

surface of the box portion. The module is snapped into the storage space 15 in the same manner as the preferred embodiment described above.

[0032] Figs. 23 and 24 show an alternative embodiment of the invention where the snap-in module 8 comprises four box-shaped drawers 50 secured within a recess 90 defined within the body 53 of the module. A moulded handle 51 defined within the outer face 52 of each drawer. It should be clear to those skilled in the art that the module can be configured with any number of drawers, and such variations are clearly within the scope of this invention. The drawers are slidably connected to the body by any suitable means. For example, moulded rails 54 projecting outwardly from the bottom face of each drawer slide within corresponding channels 55 defined within the inner surface of the walls of the body. The drawers are prevented from falling out of the body of the module by drawer tabs 56 moulded to the top of the inner face of each drawer. In the closed position, the outer face of each drawer is flush with the bottom surface of the box portion 1. Again, this module is secured within the storage space in the same manner as the preferred embodiment described above.

[0033] Figs. 25 to 28 show an alternative embodiment of the invention four wedge-shaped storage compartments 60 are secured within a recess 90 defined within the body 64 of the snap-in module 8, although any number of storage compartments may be fitted within the module and such variations are within the scope of this invention. Each storage compartment is defined by a converging outer face 61 and inner face 62 joined by a rounded compartment wall 63. A handle 51 is defined within the outer face of each compartment. Each compartment is rotatably connected to the body by any suitable means. For example, a C-shaped channel 65 moulded to the edge of the compartment where the outer and inner faces converge, is snapped onto to a moulded cylindrical rail 66 running along the top of the inner face of the body. In the closed position, the outer face of each compartment is flush with the bottom surface of the box portion and is secured in place by a flexible moulded button 67 protruding outwardly from the outer face of each compartment, and from an identical button 69 protruding from the side of the body adjacent to the rearmost compartment. The button snaps into a corresponding pocket 68 defined within the outer face of an adjacent compartment, and the button for the forwardmost compartment snaps into an identical pocket 94 defined within the adjacent side of the body of the module. Clearly, alternative methods of securing the compartments in the closed position may be used and are within the scope of this invention. The module is secured within the storage space 15 in the same manner as the preferred embodiment described above.

[0034] Figs. 29-31 show an alternative embodiment of the invention where the snap-in module comprises a multi-compartment storage compartment 70 having two identical parallel outer walls 71 which are joined by three

rectangular faces. The fourth face 73 is open to provide access to the compartment. Two integrally moulded dividing walls 74 are located within the compartment to define three equal compartments 75. The compartment is rotatably mounted within a recess 90 defined within the body 76 of the module by any suitable means, such as male connection pins 25 projecting outwardly from the outer walls which mate with female connection means (not shown), as described in the preferred embodiment. A handle 51 is defined within the outer face 77. In the closed position, the outer face of the compartment is flush with the bottom surface of the box portion 1, and in the open position, the open face is rotated away from the box portion to allow the user access to the contents of the compartments. The compartment 70 is secured in the closed position by a plastic clasp configuration 35 snapped onto a plastic member 39, as described in the preferred embodiment. The module is secured within the storage space 15 in the same manner as the preferred embodiment described above.

[0035] Figs. 32 and 33 show an alternative embodiment of the invention where the snap-in module 8 comprises three storage shelves 80 moulded to a door 81 which is rotatably connected to the body 82 of the module by a conventional hinge 83. It will be understood by those skilled in the art that any number of shelves may be moulded to the door, and such variations are within the scope of this invention. A recess 90 within the body accommodates the shelves when the door is in the closed position. The door is secured to the storage compartment by a plastic clasp configuration 35 snapped onto a plastic member 39, as described in the preferred embodiment, such that when the door is in the closed position it is flush with the bottom surface of the box portion. The module is snapped into the storage space 15 in the same manner as the preferred embodiment described above.

[0036] It should be clear to those skilled in the art that the storage space and the snap-in module 8 securable within same can extend over the entire surface the bottom surface of the box portion, or alternatively, it could occupy only a section of the bottom surface of the box portion, and such variations are clearly within the scope of this invention.

[0037] Similarly, it should be clear that the compartments need not necessarily be on the bottom of the tool case, even though that is generally the most advantageous location. Figs. 34 and 35 show an embodiment in which the compartments 16 are positioned along one side of the tool case, instead of on the bottom. Clips 5 are used to keep the case closed when desired. The lid of the case extends down along either side of the compartments to approximately their mid-line.

[0038] It should also be clear that the compartments, whether permanently installed or removable, may be located at one, two or more adjacent or separate locations in the tool case, as space permits.

[0039] The accessible compartments may be sold

separately. For instance, anyone may purchase the tool case on its own. Those in specialized fields of trade may then purchase specialized accessible compartments.

5 INDUSTRIAL APPLICABILITY

[0040] The invention provides an improved tool case as defined in the appended claims, with storage compartments which are accessible from the exterior of the case.

Claims

- 15 1. A tool case which is, preferably, made entirely of plastic and comprises a box portion (1) and a lid (3) securable onto said box portion, said tool case being characterized in that:
the box portion (1) has at least one recess (15) or one cut-out section (6), which is typically but not necessarily provided in the bottom surface thereof; said recess and said cut-out section, respectively, are adapted to receive and retain one or more storage compartments (16, 28, 60, 70, 80), to store additional items, for example items which might be employed in conjunction with the tools stored in the tool case;
the storage compartments are permanently or removably mounted in said recess or cut-out section and are accessible only from the exterior of the tool case; and
said recess or cut-out section extends across substantially less than all of said box portion.
- 20 2. A tool case as recited in claim 1; where there are at least two said compartments (16), pivotally mounted for rotation between closed and open positions, such that in said closed position, an outer face of each said compartment is coplanar and flush with a surface of said box portion, and in said open position, said outer face projects outwardly, exposing openings into said compartments.
- 25 3. A tool case as recited in claim 2, where said compartments (16) are connected to each other for ganged rotation.
- 30 4. A tool case as recited in claim 3, where said connection is by a gang bar (30) along at least one side of said compartments (16).
- 35 5. A tool case as recited in claim 3, where said connection is by a pin (85) extending from one compartment (16) engaging an appropriately-shaped slot (84) in an adjacent compartment.
- 40 6. A tool case as recited in claim 1 where said recess (15) extends across substantially less than all of the

bottom of said box portion, and where within said tool case a first panel (9) overlies at least the area of said recess, and a second panel (9') overlies an area within said tool case not above said recess, said first and second panels each having means for holding tools or tool components within said case.

7. A tool case as recited in claim 1, where said at least one compartment (16, 28, 60, 70, 80) is defined in a module (8) which is removably secured within said recess (15).
8. A tool case as recited in claim 7, where there are at least two said compartments (28), pivotally mounted for rotation between closed and open positions, such that in said closed position, an outer face of each said compartment is coplanar and flush with a surface of said box portion, and in said open position, said outer face projects outwardly, exposing openings into said compartments.
9. A tool case as recited in claim 7, wherein said at least one compartment (16) comprises a single compartment (41) with a pivotable cover (42).
10. A tool case as recited in claim 7, wherein said at least one compartment (16) comprises a plurality of drawers (50).

Patentansprüche

1. Werkzeugkasten, der vorzugsweise vollständig aus Plastik ist und einen Kastenteil (1) und einen Deckel (3), der auf dem genannten Kastenteil befestigt werden kann, aufweist, wobei der genannte Werkzeugkasten dadurch gekennzeichnet ist, dass:

der Kastenteil (1) wenigstens eine Ausnehmung (15) oder einen Ausschnittteil (6) hat, die/der typischerweise, aber nicht unbedingt, in seiner Bodenseite bereitgestellt ist, die genannte Ausnehmung bzw. der genannte Ausschnittteil zum Aufnehmen und Halten von einem oder mehr Staufächern (16, 28, 60, 70, 80) zum Aufbewahren zusätzlicher Artikel, z.B. von Artikeln, die in Verbindung mit den im Werkzeugkasten aufbewahrten Werkzeugen eingesetzt werden könnten, ausgeführt sind, die Staufächer permanent oder herausnehmbar in der genannten Ausnehmung oder dem genannten Ausschnittteil montiert sind und nur vom Äußeren des Werkzeugkastens her zugänglich sind, und sich die genannte Ausnehmung oder der genannte Ausschnittteil über im Wesentlichen weniger als den gesamten Kastenteil erstreckt.

2. Werkzeugkasten nach Anspruch 1, bei dem es wenigstens zwei der genannten Fächer (16) gibt, die zur Drehung zwischen geschlossenen und offenen Stellungen gelenkig montiert sind, so dass in der genannten geschlossenen Stellung eine Außenseite jedes genannten Fachs mit einer Oberfläche des genannten Kastenteils koplanar und bündig ist und in der genannten offenen Stellung die genannte Außenseite nach außen vorsteht, wobei Öffnungen zu den genannten Fächern freiliegen.

3. Werkzeugkasten nach Anspruch 2, bei dem die genannten Fächer (16) zur mechanisch gekuppelten Drehung miteinander verbunden sind.

4. Werkzeugkasten nach Anspruch 3, bei dem die genannte Verbindung durch einen Kupplungsstab (30) entlang wenigstens einer Seite der genannten Fächer (16) erfolgt.

5. Werkzeugkasten nach Anspruch 3, bei dem die genannte Verbindung durch einen sich von einem Fach (16) erstreckenden, in einen entsprechend geformten Schlitz (84) in einem angrenzenden Fach eingreifenden Stift (85) erfolgt.

6. Werkzeugkasten nach Anspruch 1, bei dem die genannte Ausnehmung (15) sich über im Wesentlichen weniger als den gesamten Boden des genannten Kastenteils erstreckt und bei dem in dem genannten Werkzeugkasten eine erste Platte (9) wenigstens den Bereich der genannten Ausnehmung überlagert und eine zweite Platte (9') einen Bereich in dem genannten Werkzeugkasten überlagert, der nicht über der genannten Ausnehmung ist, wobei die genannte erste und die genannte zweite Platte jeweils Vorrichtungen zum Halten von Werkzeugen oder Werkzeugteilen in dem genannten Kasten haben.

7. Werkzeugkasten nach Anspruch 1, bei dem das genannte wenigstens eine Fach (16, 28, 60, 70, 80) in einem Modul (8) definiert ist, das in der genannten Ausnehmung (15) herausnehmbar befestigt ist.

8. Werkzeugkasten nach Anspruch 7, bei dem es wenigstens zwei genannte Fächer (28) gibt, die zur Drehung zwischen geschlossenen und offenen Stellungen gelenkig montiert sind, so dass in der genannten geschlossenen Stellung eine Außenseite jedes genannten Fachs mit einer Oberfläche des genannten Kastenteils koplanar und bündig ist und in der genannten offenen Stellung die genannte Außenseite nach außen vorsteht, wobei Öffnungen zu den genannten Fächern freiliegen.

9. Werkzeugkasten nach Anspruch 7, bei dem das genannte wenigstens eine Fach (16) ein einzelnes

Fach (41) mit einem Klappdeckel (42) umfasst.

10. Werkzeugkasten nach Anspruch 7, bei dem das genannte wenigstens eine Fach (16) eine Mehrzahl von Schubfächern (50) aufweist.

Revendications

1. Boîte à outils qui est, de préférence, entièrement fabriquée en matière plastique et comprend une partie casier (1) et un couvercle (3) qui peut être fixé sur ladite partie casier, ladite boîte à outils étant caractérisée en ce que :

la partie casier (1) possède au moins un évidement (15) ou une section découpée (6), qui est typiquement, mais pas nécessairement, prévue dans la face inférieure de la partie casier ; ledit évidement et ladite section découpée sont respectivement adaptés de manière à recevoir et à retenir un ou plusieurs compartiments de rangement (16, 28, 60, 70, 80) afin de conserver des articles supplémentaires, par exemple des articles susceptibles d'être utilisés en conjonction avec les outils rangés dans la boîte à outils ;

les compartiments de rangement sont montés de manière permanente ou amovible dans ledit évidement ou dans ladite section découpée et sont uniquement accessibles à partir de l'extérieur de la boîte à outils ; et

ledit évidement ou ladite section découpée s'étend sur une surface qui est essentiellement inférieure à l'ensemble de ladite partie casier.

2. Boîte à outils, selon les stipulations de la revendication 1, dans laquelle il existe au moins deux desdits compartiments (16), montés de manière pivotante en vue d'une rotation entre une position ouverte et une position fermée, de sorte que dans ladite position fermée, la face externe de chacun desdits compartiments est coplanaire et affleure avec une surface de ladite partie casier, et dans ladite position ouverte, ladite face externe se projette vers l'extérieur, exposant des ouvertures dans lesdits compartiments.

3. Boîte à outils, selon les stipulations de la revendication 2, dans laquelle lesdits compartiments (16) sont reliés l'un à l'autre en vue d'une rotation en série.

4. Boîte à outils, selon les stipulations de la revendication 3, dans laquelle ledit raccordement se fait à l'aide d'une barre à ergots multiples (30) prévue le long d'un côté au moins desdits compartiments (16).

5. Boîte à outils, selon les stipulations de la revendication 3, dans laquelle ledit raccordement se fait par une broche (85) qui se prolonge à partir d'un compartiment (16) et s'engage dans une fente (84) de forme appropriée prévue dans un compartiment adjacent.

6. Boîte à outils, selon les stipulations de la revendication 1, dans laquelle ledit évidement (15) s'étend sur une surface qui est essentiellement inférieure à l'ensemble de ladite partie casier, et dans laquelle un premier panneau (9) à l'intérieur de ladite boîte à outils recouvre au moins la surface dudit évidement, et un deuxième panneau (9') recouvre une surface à l'intérieur de ladite boîte à outils ne se trouvant pas au-dessus dudit évidement, lesdits premier et deuxième panneaux possédant chacun des moyens permettant de retenir des outils ou des composants d'outils dans ladite boîte.

7. Boîte à outils, selon les stipulations de la revendication 1, dans laquelle l'un au moins desdits compartiments (16, 28, 60, 70, 80) est défini dans un module (8) qui est fixé de manière amovible à l'intérieur dudit évidement (15).

8. Boîte à outils, selon les stipulations de la revendication 7, dans laquelle il existe au moins deux desdits compartiments (28), montés de manière pivotante en vue d'une rotation entre une position ouverte et une position fermée, de sorte que dans ladite position fermée, la face externe de chacun desdits compartiments est coplanaire et affleure avec une surface de ladite partie casier, et dans ladite position ouverte, ladite face externe se projette vers l'extérieur, exposant des ouvertures dans lesdits compartiments.

9. Boîte à outils, selon les stipulations de la revendication 7, dans laquelle l'un au moins desdits compartiments (16) comprend un seul compartiment (41) avec un couvercle pivotant (42).

10. Boîte à outils, selon les stipulations de la revendication 7, dans laquelle l'un au moins desdits compartiments (16) comprend une pluralité de tiroirs (50).

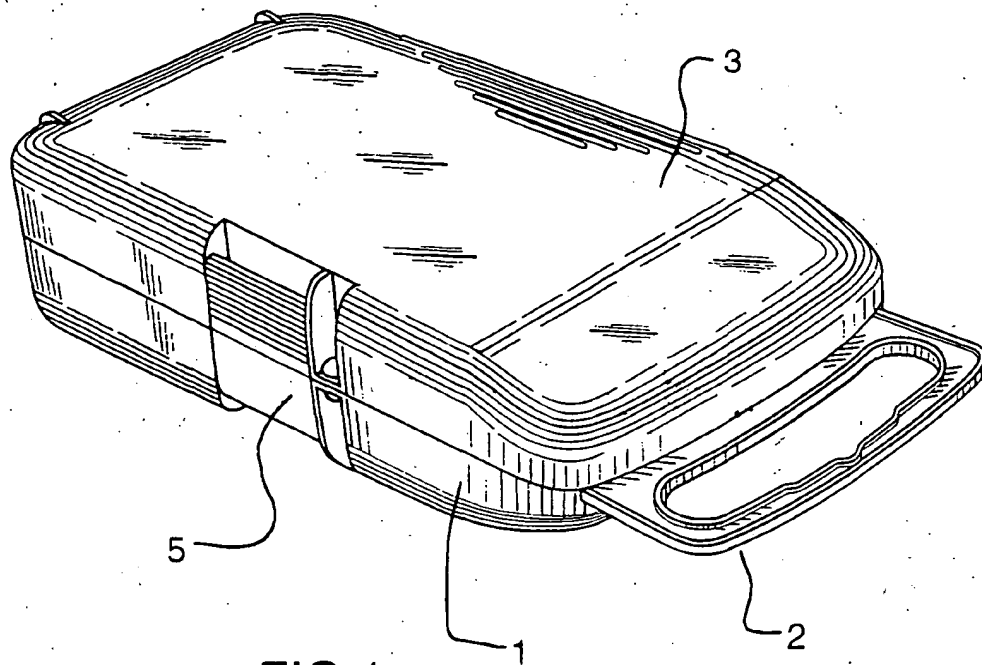


FIG.1

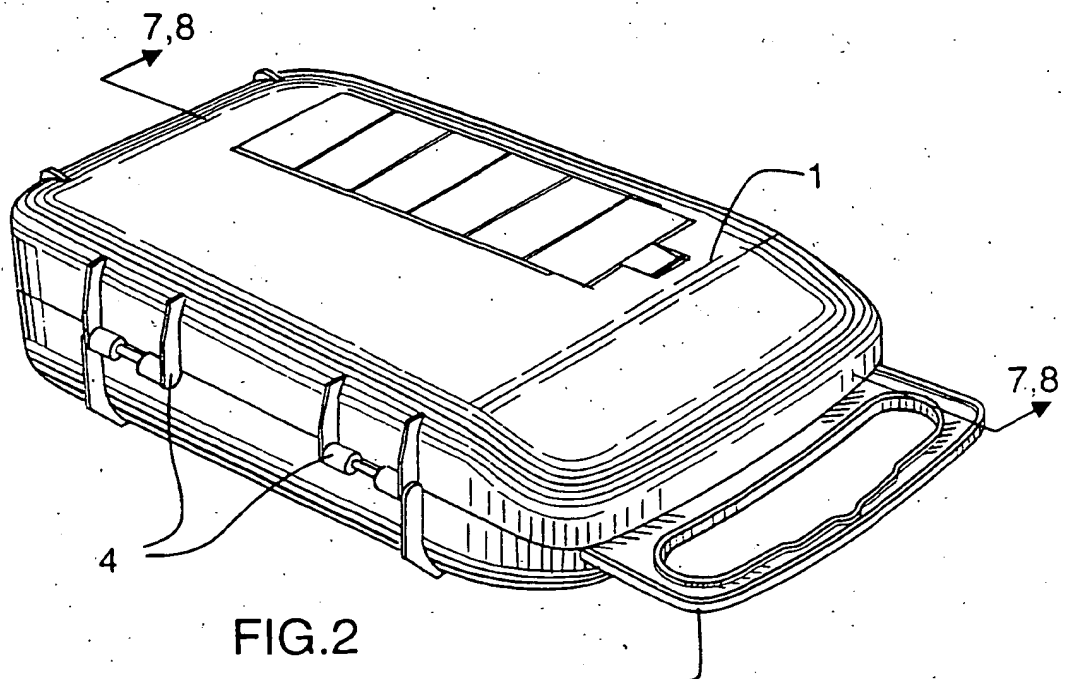


FIG.2

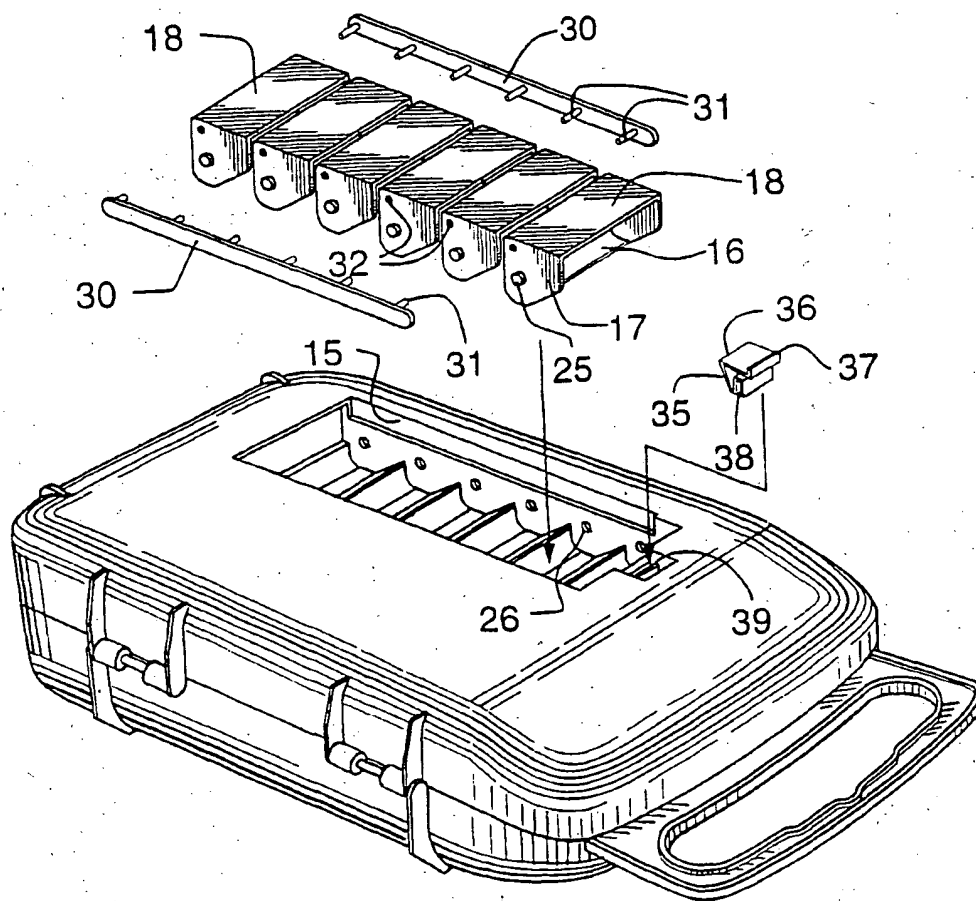


FIG.3

FIG.4

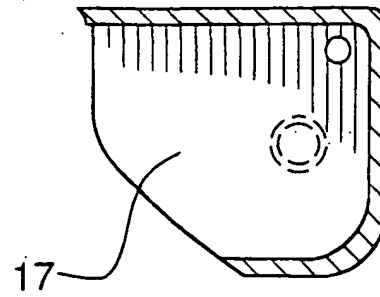


FIG.5

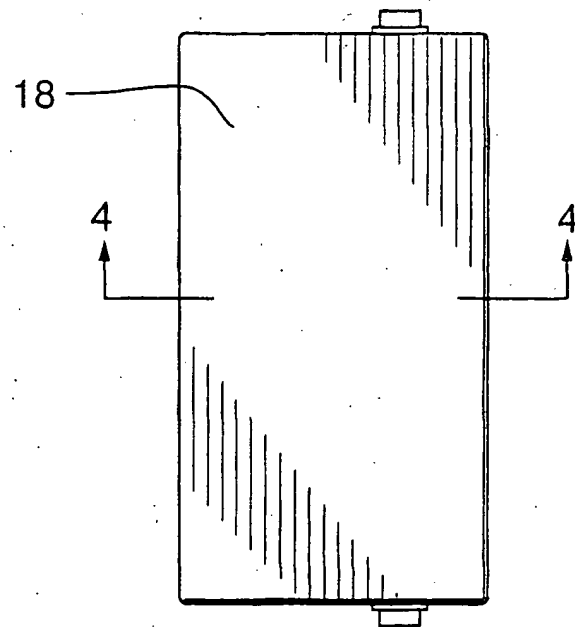
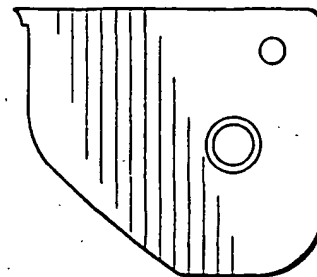


FIG.6



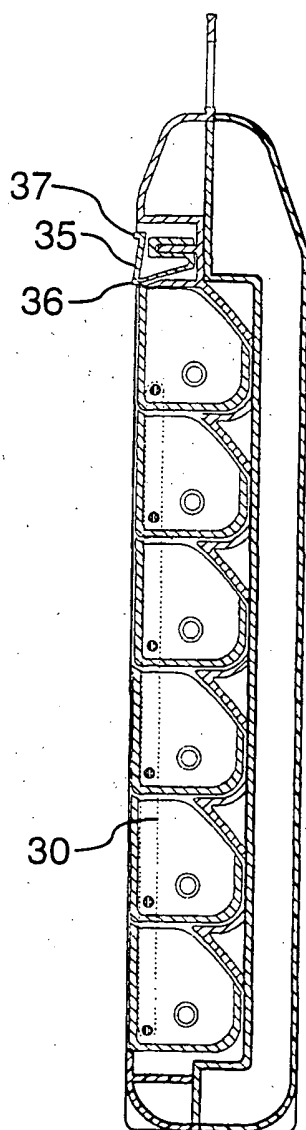


FIG. 7

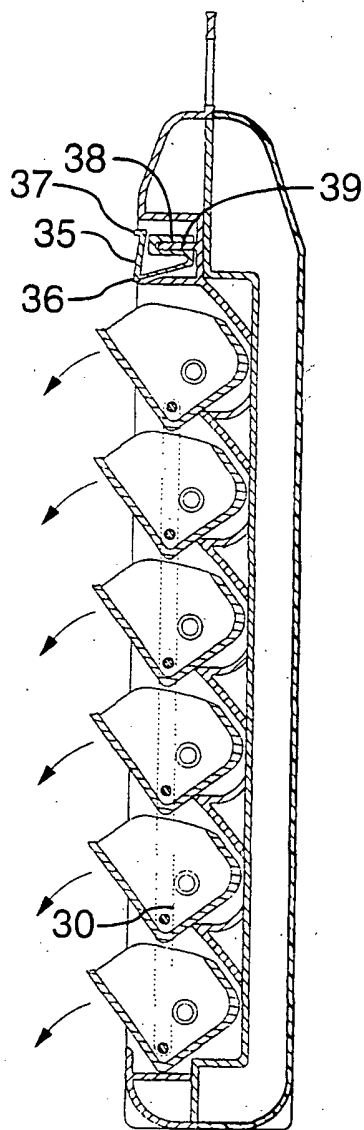


FIG. 8

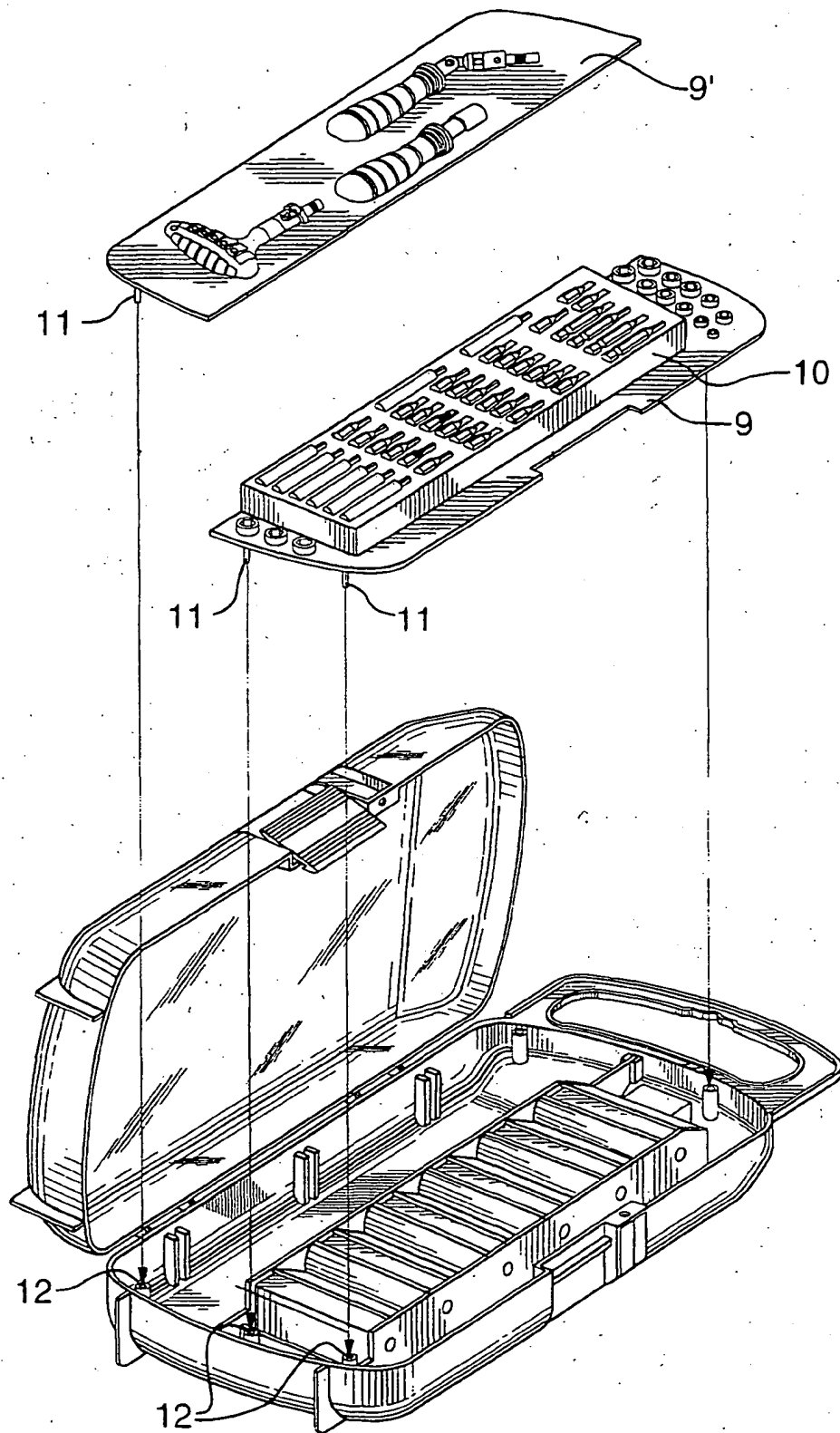


FIG.9

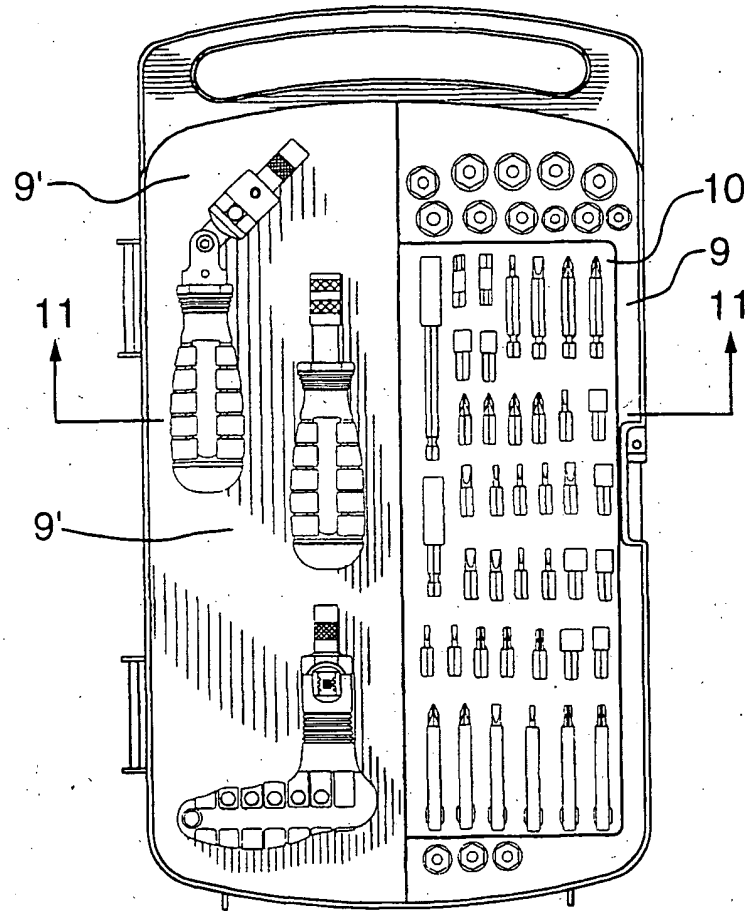


FIG. 10

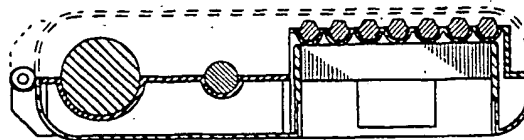


FIG. 11

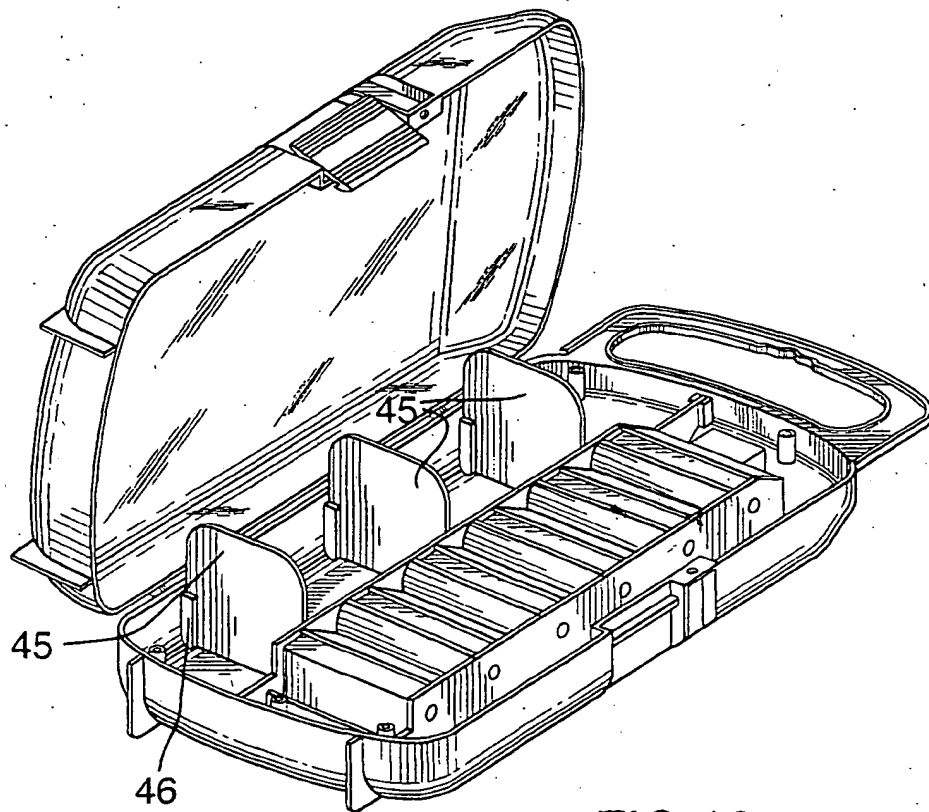


FIG.12

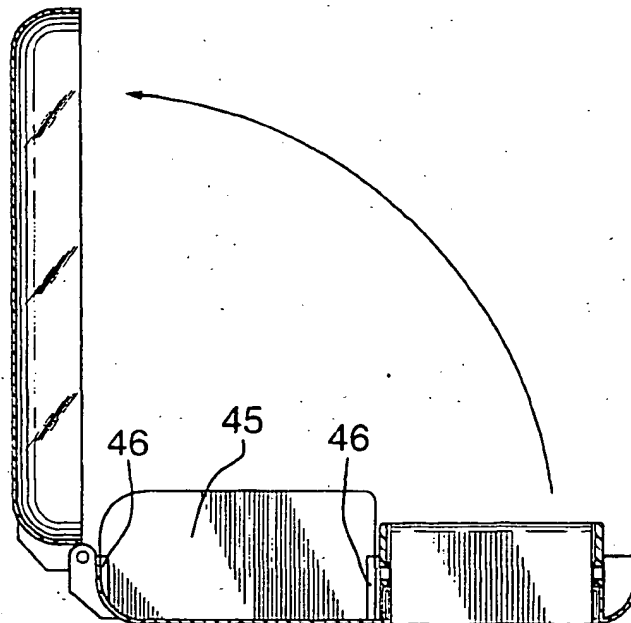


FIG.13

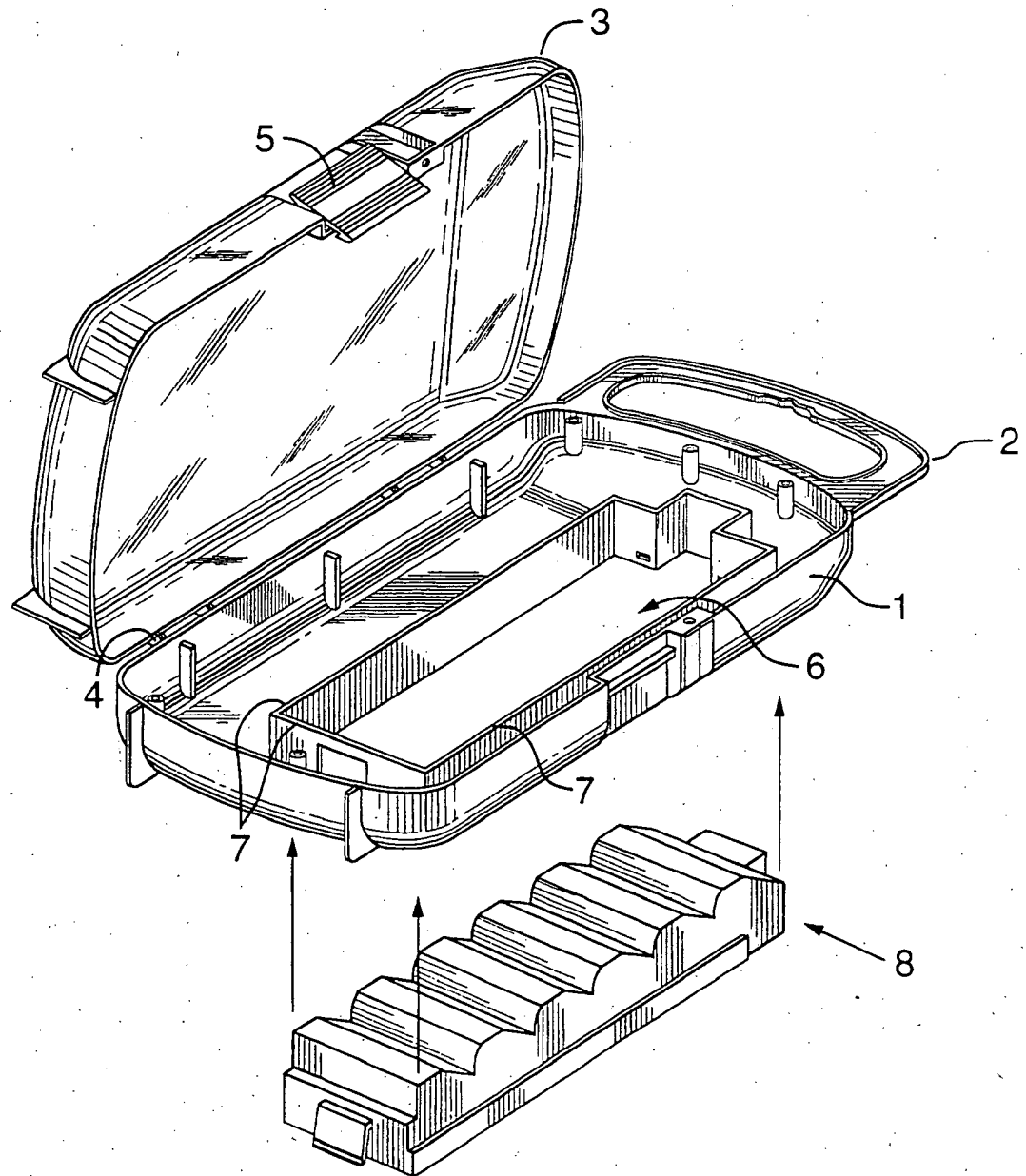


FIG.14

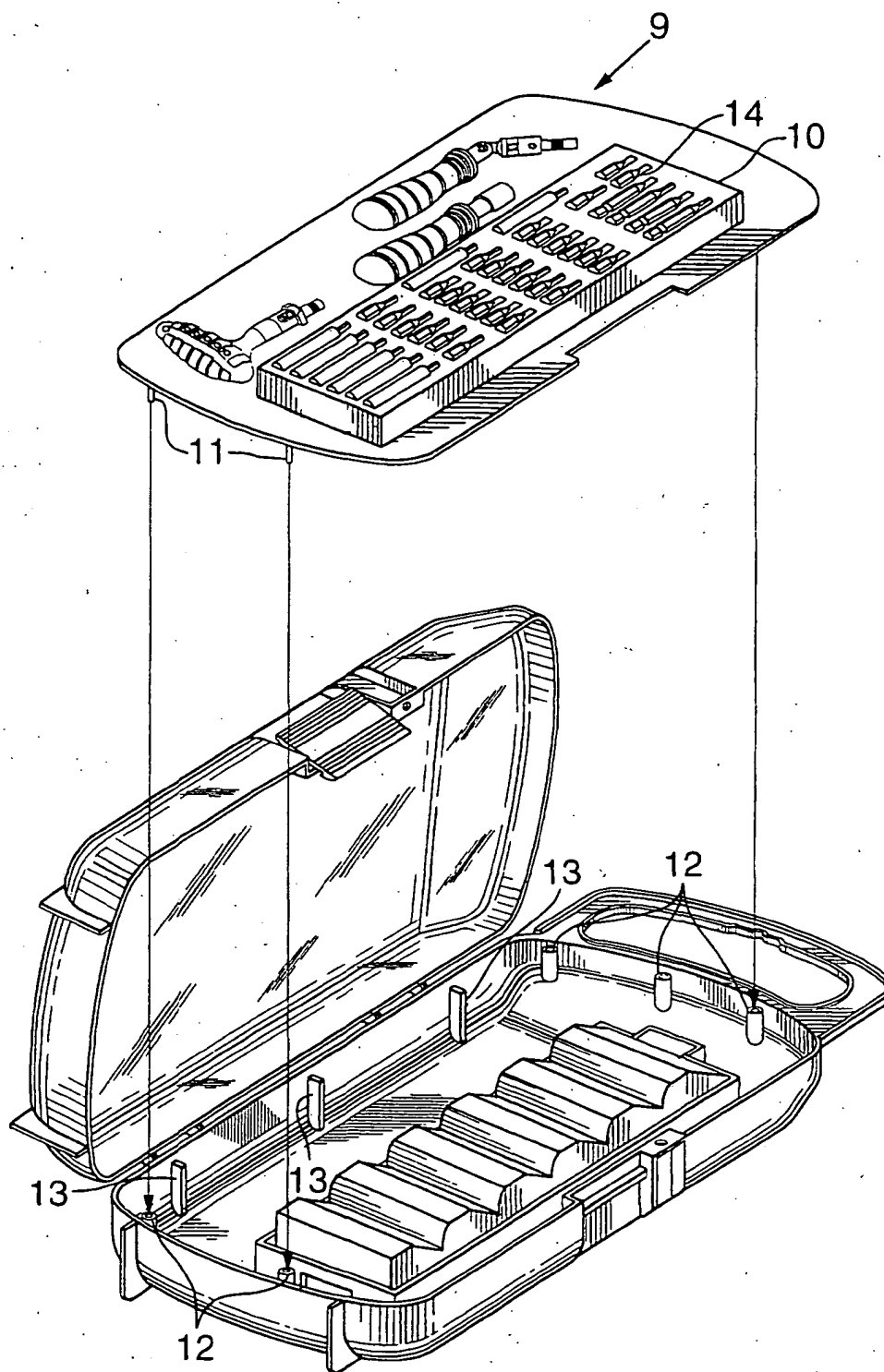


FIG.15

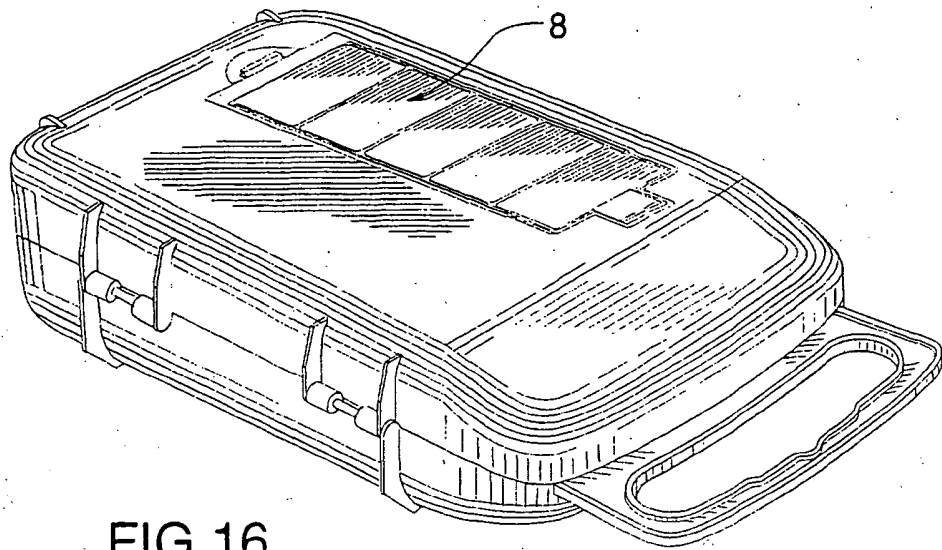


FIG. 16

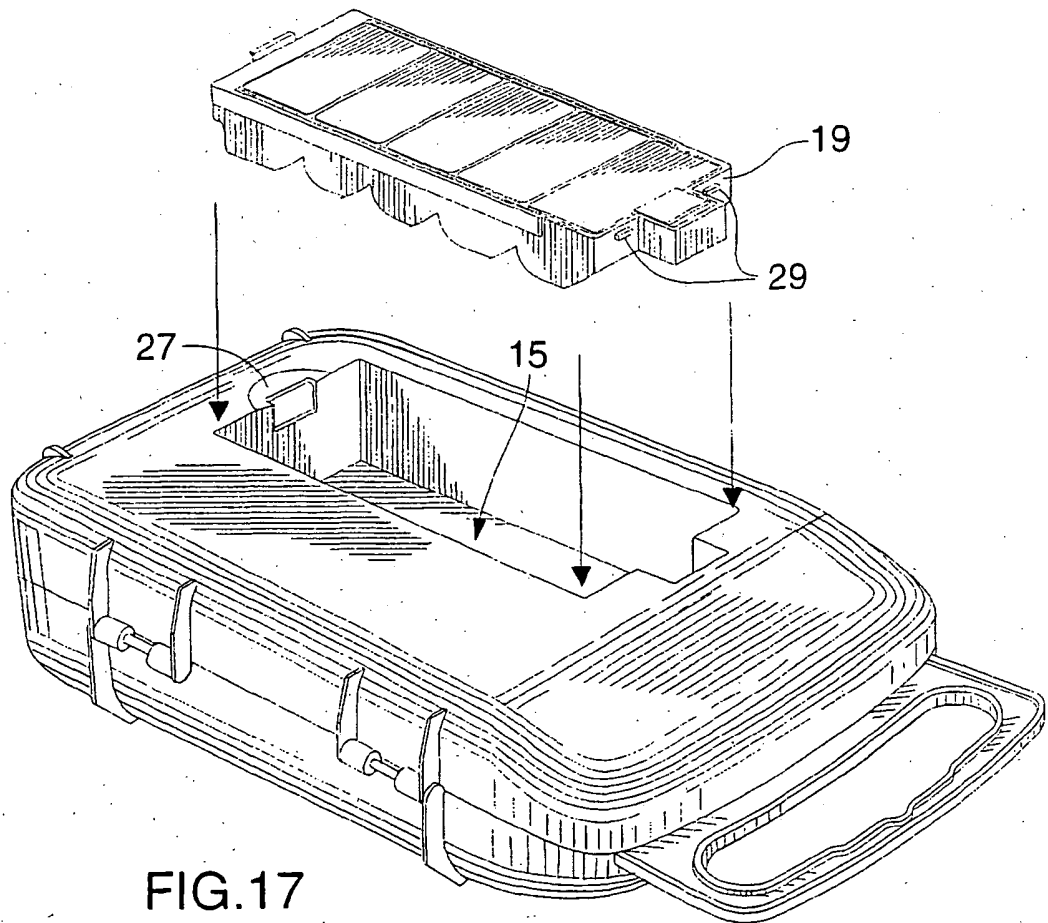


FIG. 17

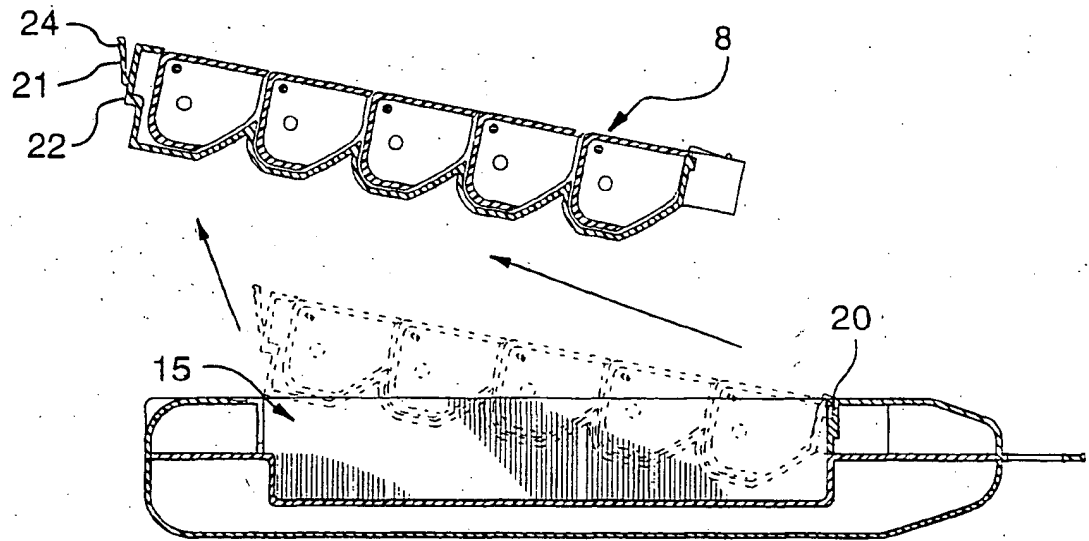


FIG.18

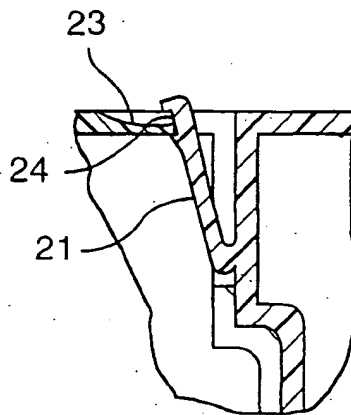


FIG.19

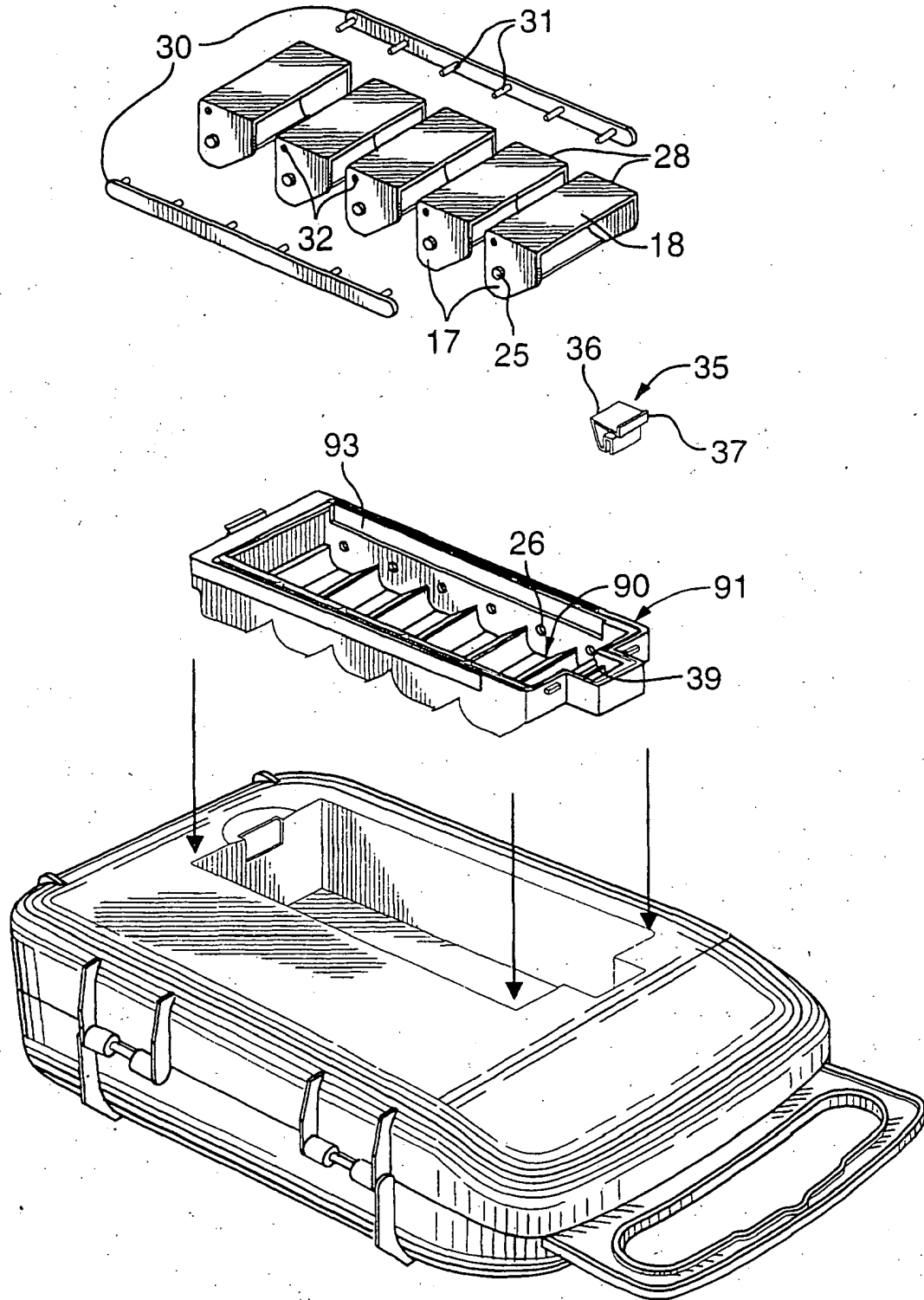


FIG.20

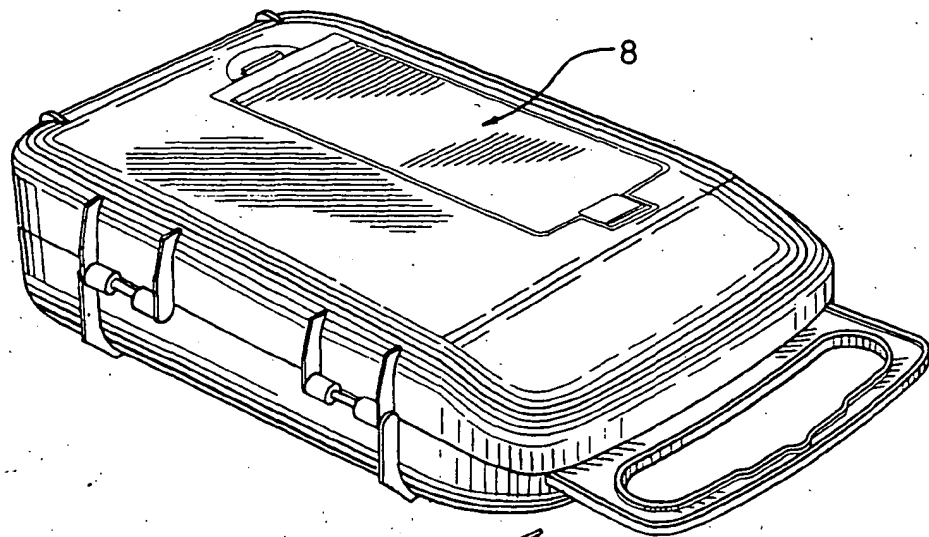
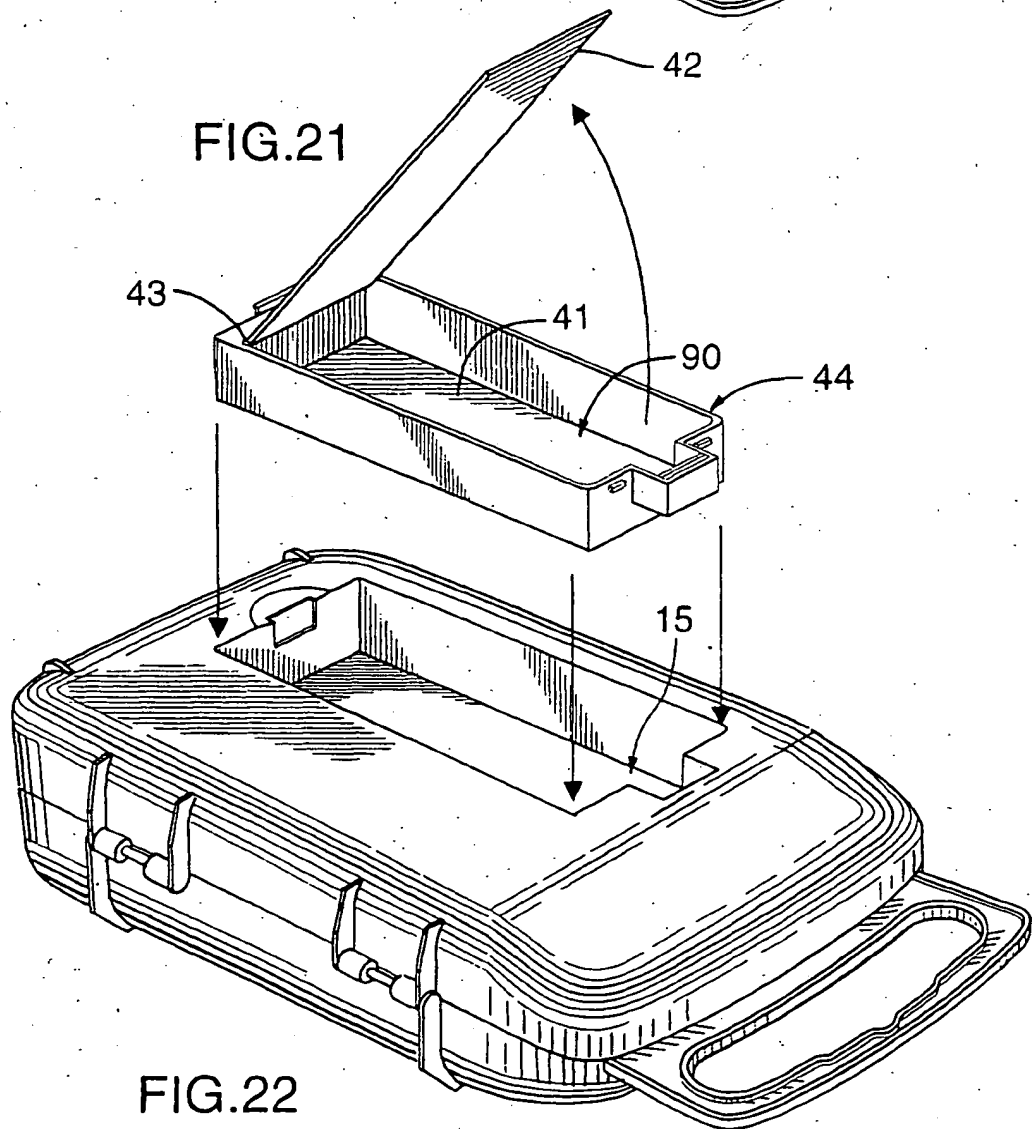


FIG.21



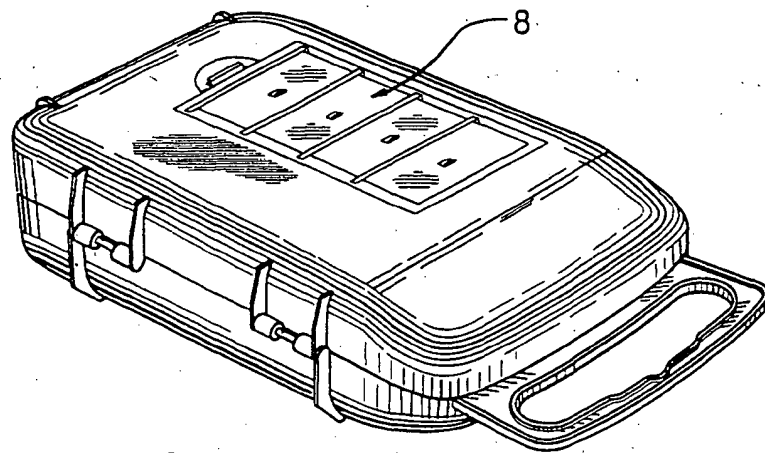


FIG. 23

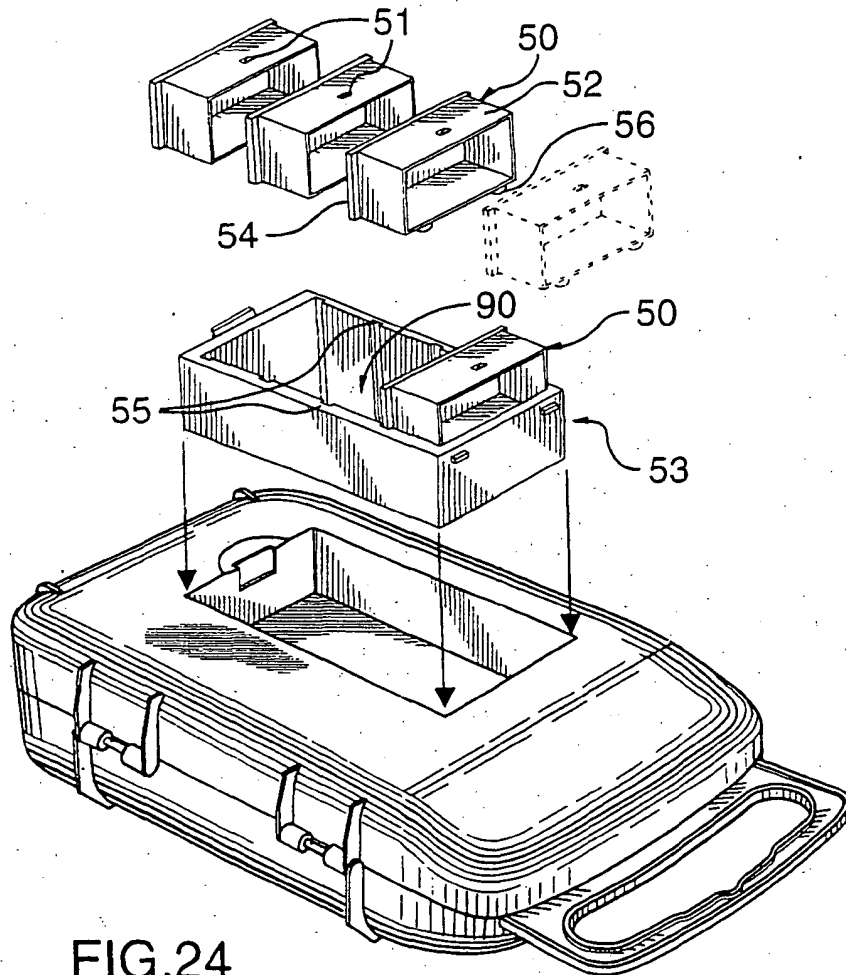


FIG. 24

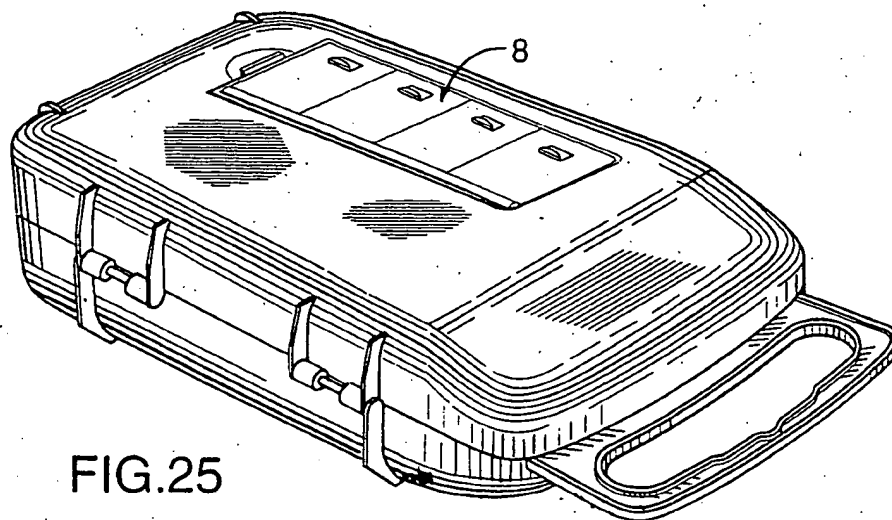


FIG. 25

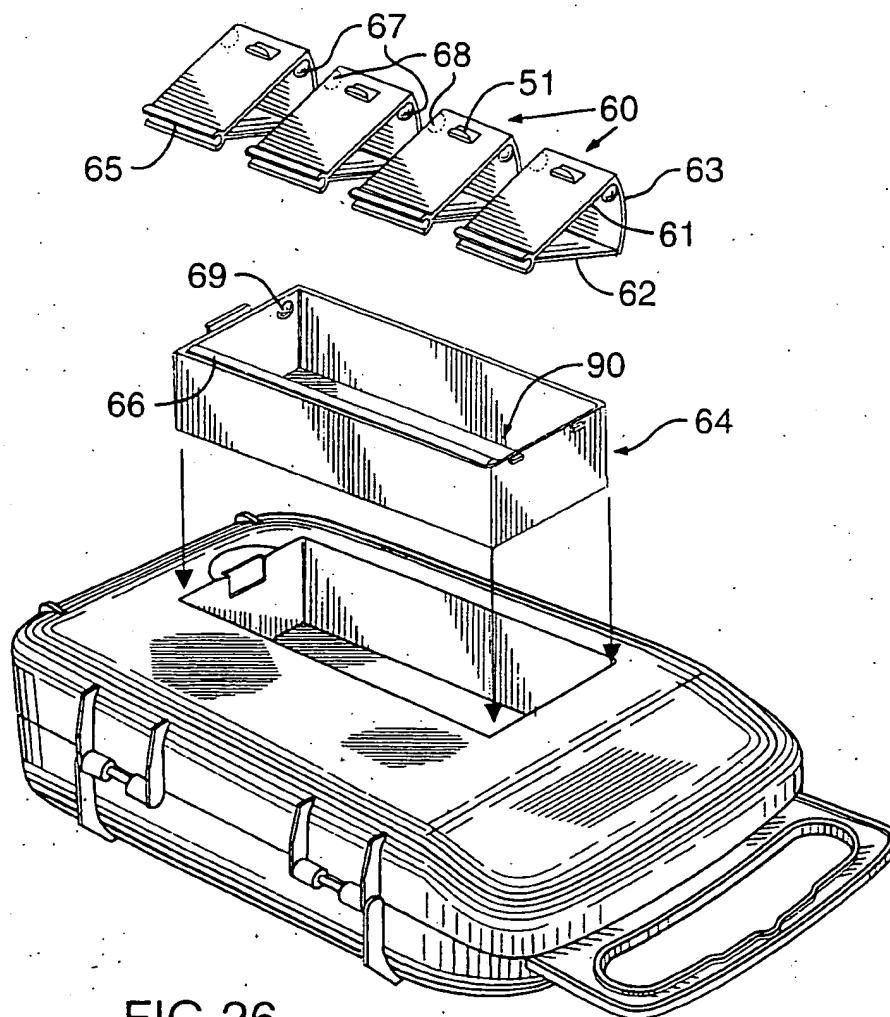


FIG. 26

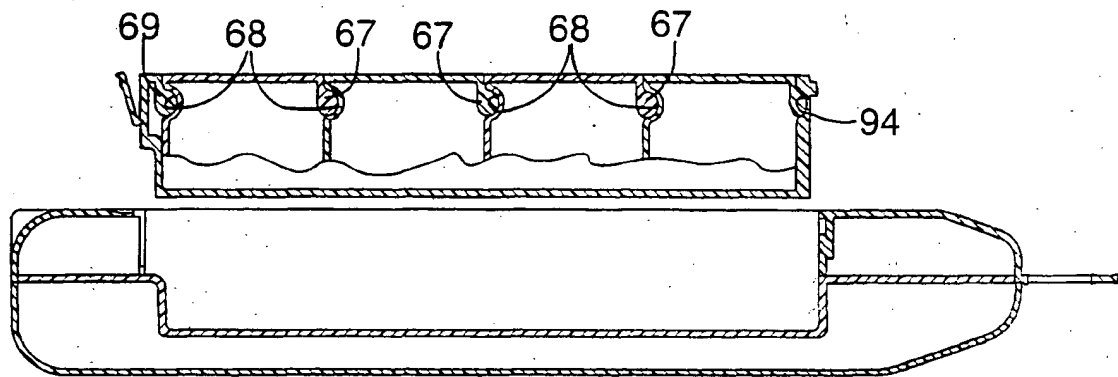


FIG. 27

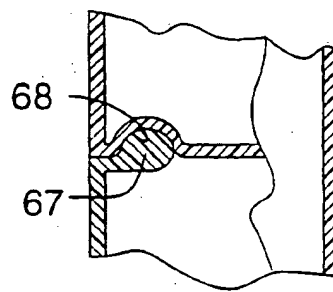


FIG. 28

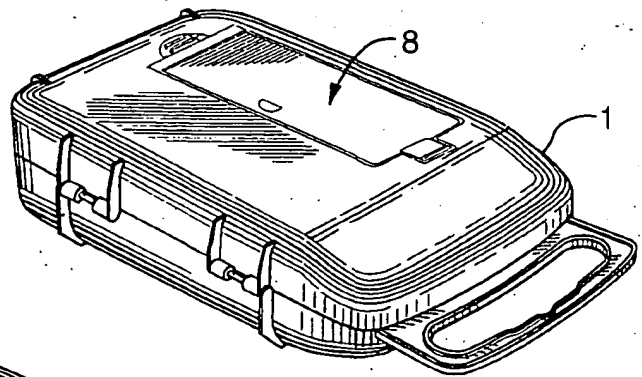


FIG. 29

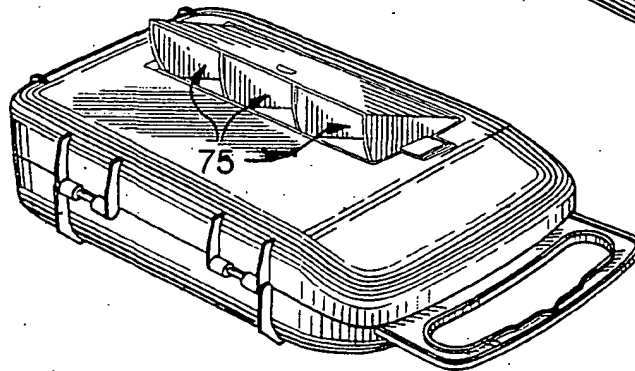


FIG. 30

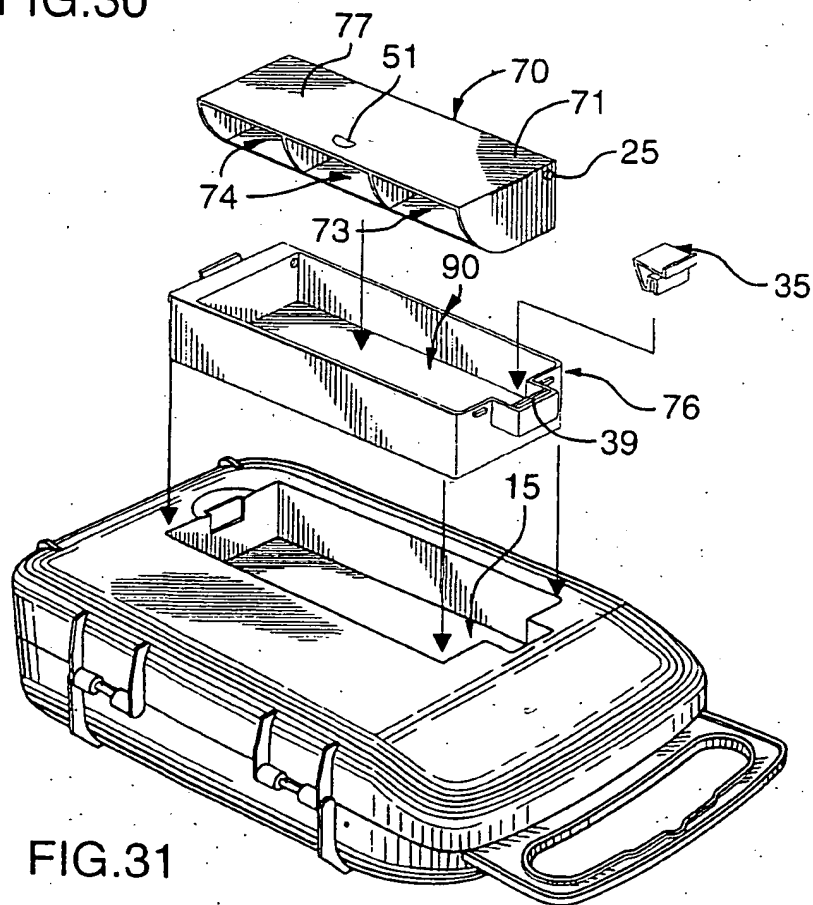
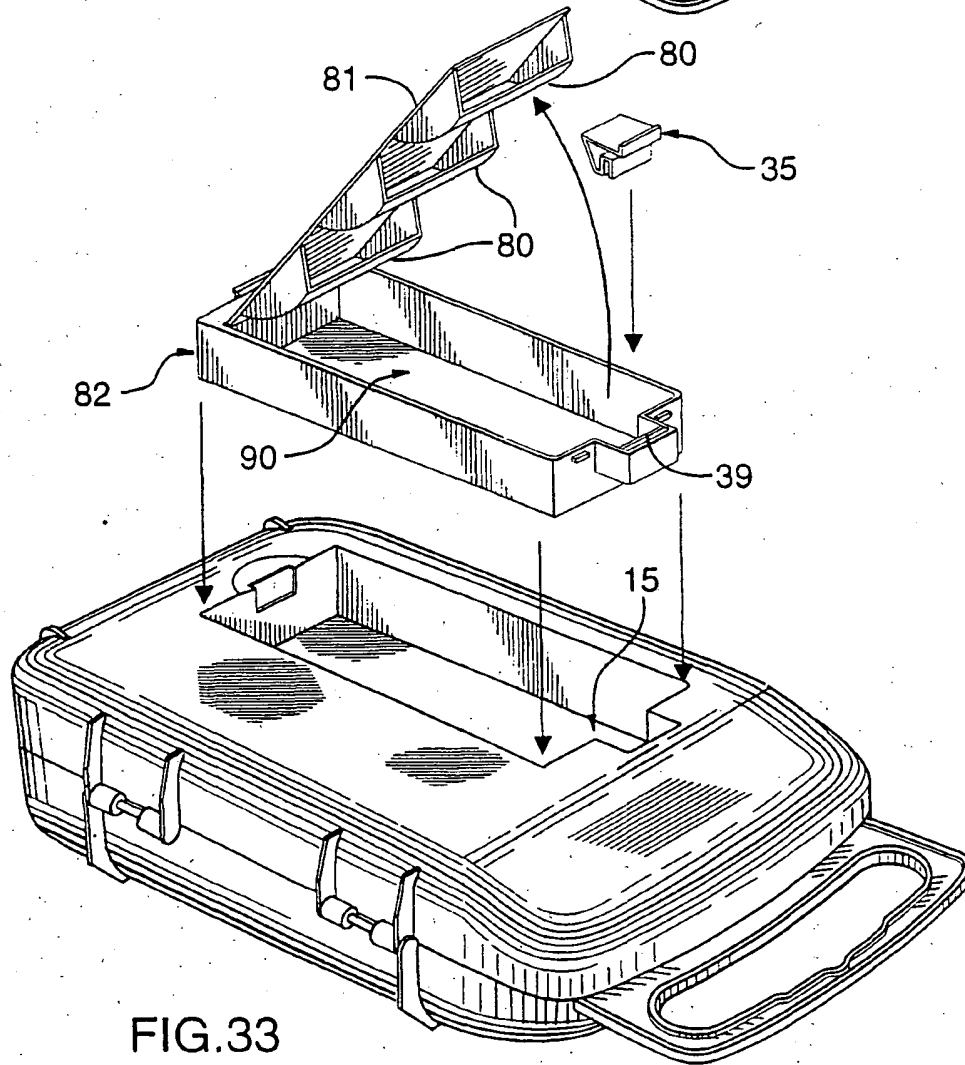
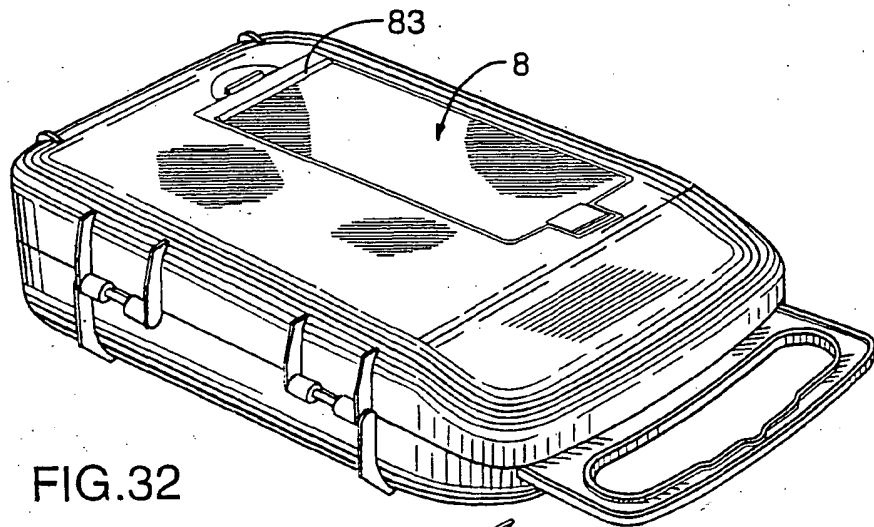


FIG. 31



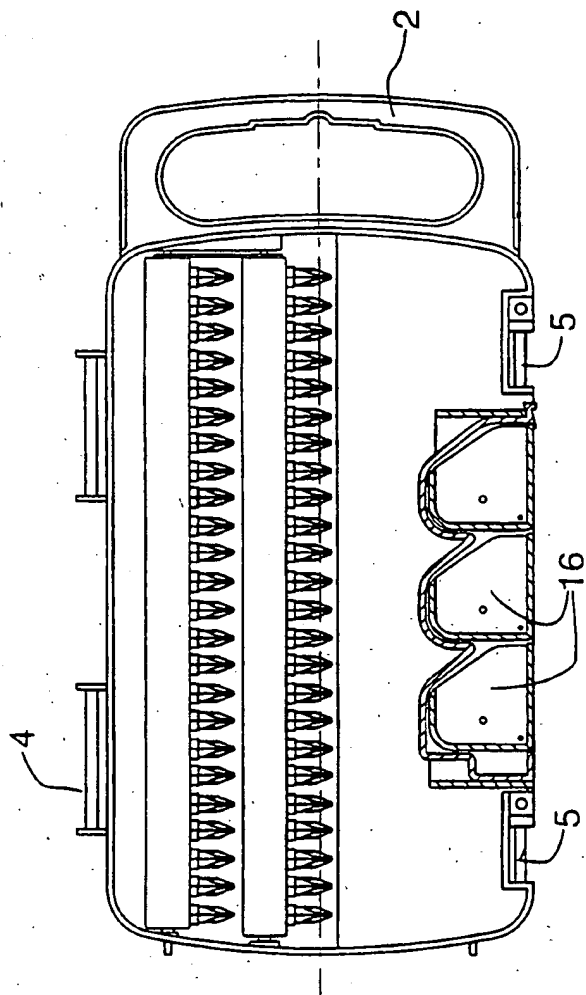


FIG. 34

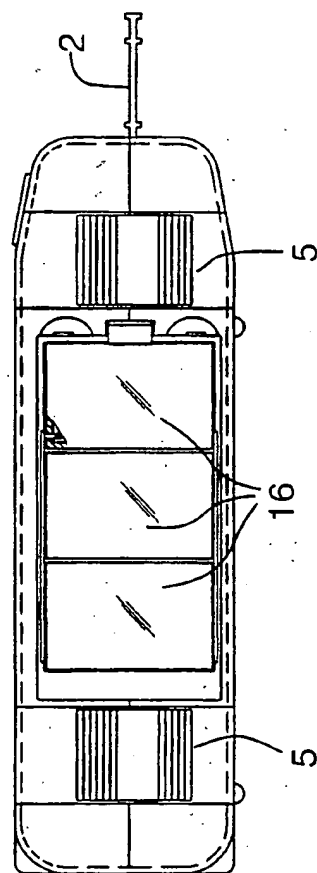


FIG. 35

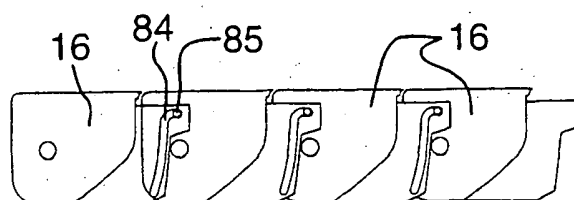


FIG.36

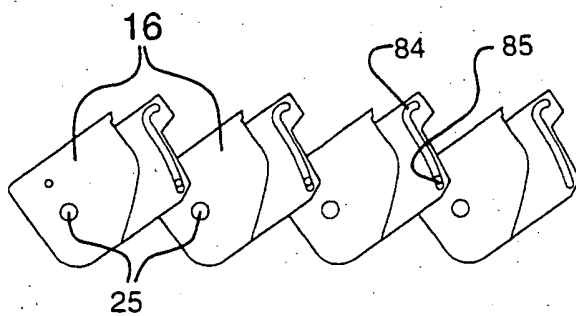


FIG.37